

ADDITIONAL

 **PIONEER**

015

Service Manual

**ORDER NO.
ARP-475-0**

FM/AM DIGITAL SYNTHESIZED TUNER

TX-200Z

**ZEZ,
Z, ZS**

Model	Power requirement	Destination
TX-200Z/ZEZ	DC 20V/250mA	West Germany
TX-200Z/Z	DC 20V/250mA	General export
TX-200Z/ZS	DC 20V/250mA	South Africa

The basic performance of the model TX-200Z/ZEZ, Z and ZS is the same as the model TX-950/KU. Please refer to the TX-950/KU service manual (ARP-472) with the exception of this service manual. This additional service manual is applicable to the TX-200Z/ZEZ, Z and ZS.

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1. SPECIFICATIONS

FM Tuner Section

Frequency range	87.5MHz to 108MHz
Usable Sensitivity	10.8dBf, IHF (0.95μV/75Ω)
50dB Quieting Sensitivity	
	Mono; 17.2dBf, IHF (2μV/75Ω)
	Stereo; 38.2dBf, IHF (22.3μV/75Ω)
Sensitivity (DIN)	Mono; 0.8μV/75Ω
	Stereo; 28μV/75Ω
Signal-to-Noise Ratio	Mono; 80dB
	Stereo; 76dB
Signal-to-Noise Ratio (DIN)	Mono; 72dB
	Stereo; 65dB
Distortion	Stereo; 0.4% (1kHz)
Alternate Channel Selectivity	67dB (400kHz)
Stereo Separation	40dB (1kHz)
Frequency Response	30Hz to 15kHz±1dB
IF Response Ratio	118dB
Antenna Input	300Ω balanced
	75Ω unbalanced

AM Tuner Section

Frequency range	530kHz to 1600kHz when 10kHz step
	531kHz to 1602kHz when 9kHz step
Sensitivity (IHF, Loop antenna)	200μV/m
Signal-to-Noise Ratio	52dB
Antenna	Loop Antenna

Audio Section

Output (Level/Impedance)	
FM (100% MOD) FIXED	650mV/1.7kΩ
AM (30% MOD) FIXED	150mV/1.7kΩ

Miscellaneous

Power Requirements	DC20V
Dimensions	420 (W) x 60 (H) x 219 (D)mm
Weight (without package)	2kg (4 lb 7 oz)

Furnished Parts

FM T-type Antenna	1
AM Loop Antenna	1
Connection Cord with Pin Plugs	1
DC cord	1

2. CONTRAST OF MISCELLANEOUS PARTS

The TX-200Z/ZEZ, Z and ZS type are the same as the TX-950/KU type with the exception of the following sections.

Mark	Symbol & Description	Part No.			
		TX-950/KU type	TX200Z/ZEZ type	TX-200Z/Z type	TX-200Z/ZS type
▲ ★★	FU601				
	Complex assembly	GWM-346	GWM-347	GWM-347	GWM-365
	LED assembly	non supply	non supply	non supply	non supply
	Switch assembly	AWS-163	...	...	...
	Fuse (0.8A/125V)	AEK-118	...	...	...
	Front panel assembly	ANM-602	ANM-568	ANM-568	ANM-568
	Knob cap	AAD-778	...	...	...
	Knob (POWER)	AAC-059	...	...	...
	Coild spring	ABH-134	...	...	...
	Connection cord	ADE-074	ADE-044	ADE-044	ADE-044
▲	DC power cord	...	ADE-076	ADE-076	ADE-076
	Operation Instructions (English)	ARB-602	...	*RRB-235 or RRB-237	*RRB-235 or RRB-237
	Operation Instructions (German)	...	*RRD-068 or RRD-067	...	...
	Note sheet (English, French, German, Italian)	...	ARR-051	ARR-051	ARR-051
	Cabinet bumper	AEC-903	AEC-784	AEC-784	AEC-784
	Packing case	AHE-332	AHE-373	AHE-373	AHE-373
	AC Power cord	ADG-073	...	...	...
	Screw (3 x 6)	VMZ30P060FMC	...	...	...
	(Switch assembly)				

*NOTE:

Since the unit may be sold as a component in combination system including model DC-200Z/DC-201Z and PL-200Z/PL-201Z or DC-100Z/DC-101Z and PL-200Z/PL-201Z, the instruction manual covers those models in combined form. The manual is packaged with models DC-200Z/DC-201Z or DC-100Z/DC-101Z.

RRB-235, RRD-068 DC-200Z/DC-201Z

RRB-237, RRD-067 DC-100Z/DC-101Z

3. FOR THE ZEZ AND Z TYPES

ELECTRICAL PARTS LIST

NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560Ω 56 × 10¹ 561 RD4PS 561 J

47kΩ 47 × 10³ 473 RD4PS 473 J

0.5Ω 0R5 RN2H 0R5 K

1Ω 010 RS1P 010 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10¹ 5621 RN4SR 5621 F

- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- For your Parts Stock Control, the fast moving items are indicated with the marks $\star\star$ and \star .

$\star\star$ GENERALLY MOVES FASTER THAN \star

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

Miscellaneous Parts

Mark	Symbol & Description	Part No.
	Complex assembly	GWM-347

Complex Assembly (GWM-347)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
$\star\star$	IC201	PA3001-A (HA11225)
$\star\star$	IC301	HA12016
$\star\star$	IC401	LA1247
$\Delta \star\star$	IC601	NJM78M13A
$\star\star$	IC701	TD6104P
$\star\star$	IC702	TC9157P
$\star\star$	IC703	TD6301AP
$\star\star$	Q101	2SK241-Y
$\star\star$	Q102	2SC2786-L
$\star\star$	Q103, Q201	2SC2668
$\star\star$	Q104, Q105	2SK161-Y
$\star\star$	Q301 – Q303, Q601, Q602, Q606, Q608, Q701, Q702, Q704 – Q707, Q801, Q802	2SC1740S (2SC2458) (2SC2603) (JC501)
$\star\star$	Q304, Q605, Q607, Q703	2SA933S (2SA1048) (2SA1115) (JA101)
$\star\star$	Q305, Q306	2SK246
$\star\star$	Q603	2SC2705(A)
$\star\star$	Q604	2SA1145(A)
\star	D101 – D103	1SV147
\star	D201, D202, D301, D403, D404, D701 – D709, D801, D802	1S1555 (US1035)
$\Delta \star$	D302, D606	S5566
\star	D401, D402	SUC321C2/D2-SP (SVC321C2/D2)
\star	D605	RD5.6EB (HZ5.6EB)

TRANSFORMERS, COILS AND FILTERS

Mark	Symbol & Description	Part No.
	T101	FM RF transformer
	T102	FM IF transformer
	T201	FM DET transformer
	T401	AM ANT transformer
	L101	FM ANT coil
	L102	FM ANT coil
	L103	FM OSC coil
	L104, L105, C201, L202, RF choke coil	ATH-049
	L401	AM OSC coil
	F201	FM ceramic filter
	F202	FM ceramic filter
	F301	Beat eliminate filter
	F401	AM ceramic filter
		ATC-194
		ATE-063
		ATE-052
		ATB-099
		ATC-192
		ATC-193
		ATC-214
		ATB-100
		ATF-119
		ATF-107
		ATF-146
		ATF-133

SWITCHES

Mark	Symbol & Description	Part No.
$\star\star$	S3 – S8, Tact switch	ASG-711
	S11 – S13, S15, S16	(ASG-703)
$\star\star$	S17 Slide switch	ASH-034

CAPACITORS

Mark	Symbol & Description	Part No.
	TC401, TC402 Ceramic trimmer	ACM-015
	C601 Electrolytic (2200/35)	ACH-367
	C713 Electrolytic (22000/6)	ACH-243
	C401	CCDCH 080D 50
	C117	CCDCH 100D 50
	C115, C404, C717	CCDCH 150J 50
	C716	CCDCH 180J 50
	C116	CCDCH 330J 50
	C101, C102, C105, C106	CCDRH 390J 50
	C108	CCDSL 020C 50
	C424	CCDSL 030C 50
	C109, C111, C112	CCDSL 050C 50
	C110	CCDSL 101J 50
	C205, C718	CCDSL 221J 50
	C119	CCDTH 180J 50
	C212	CCPCH 3R9K 50
	C425	CCPSL 101J 50
	C611	CEA R47M 50L
	C207, C211, C306, C312, C313, C702, C709, C711, C712	CEA 010M 50L
	C705	CEA 1R5M 50L
	C303, C603, C604	CEA 221M 16L
	C307, C308	CEA 3R3M 50L
	C412, C419, C703	CEA 330M 16L
	C301, C302, C414, C415, C613, C701	CEA 4R7M 50L
	C213, C311, C607	CEA 470M 25L
	C714	CEA 471M 6L
	C309, C310, C410, C423	CKDYB 102K 50L
	C314, C315	CKDYB 182K 50
	C317, C318	CKDYB 561K 50
	C316	CKDYB 681K 50
	C104, C107, C113, C114, C118, C201, C202, C208, C210, C403, C409, C413, C418, C704, C706 – C708	CKDYF 103Z 50
	C103, C203, C204, C209, C214, C402, C407, C408, C416, C417, C420, C422, C715, C719	CKDYF 223Z 50
	C305, C411, C206, C602, C612, C710	CKDYF 473Z 50
	C605, C606	CKDYX 473M 25
	C304	CQSA 102J 50
	C405	CQSA 431J 50
	C421	CQMA 473J 50

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR301 Semi-fixed	VRTB6V332
⚠	R601	RS1LMF 151J
	R608	RS1LMF 680J
	R720, R721 Resistor array	ACN-142
	R734	RD1/4PMFL 4R7J
	R308, R310, R311, R402, R415, R602, R605, R702, R710, R724, R728 – R732, R802, R807	RD1/4PM □□□J
	Other resistors	RD1/8PM □□□J

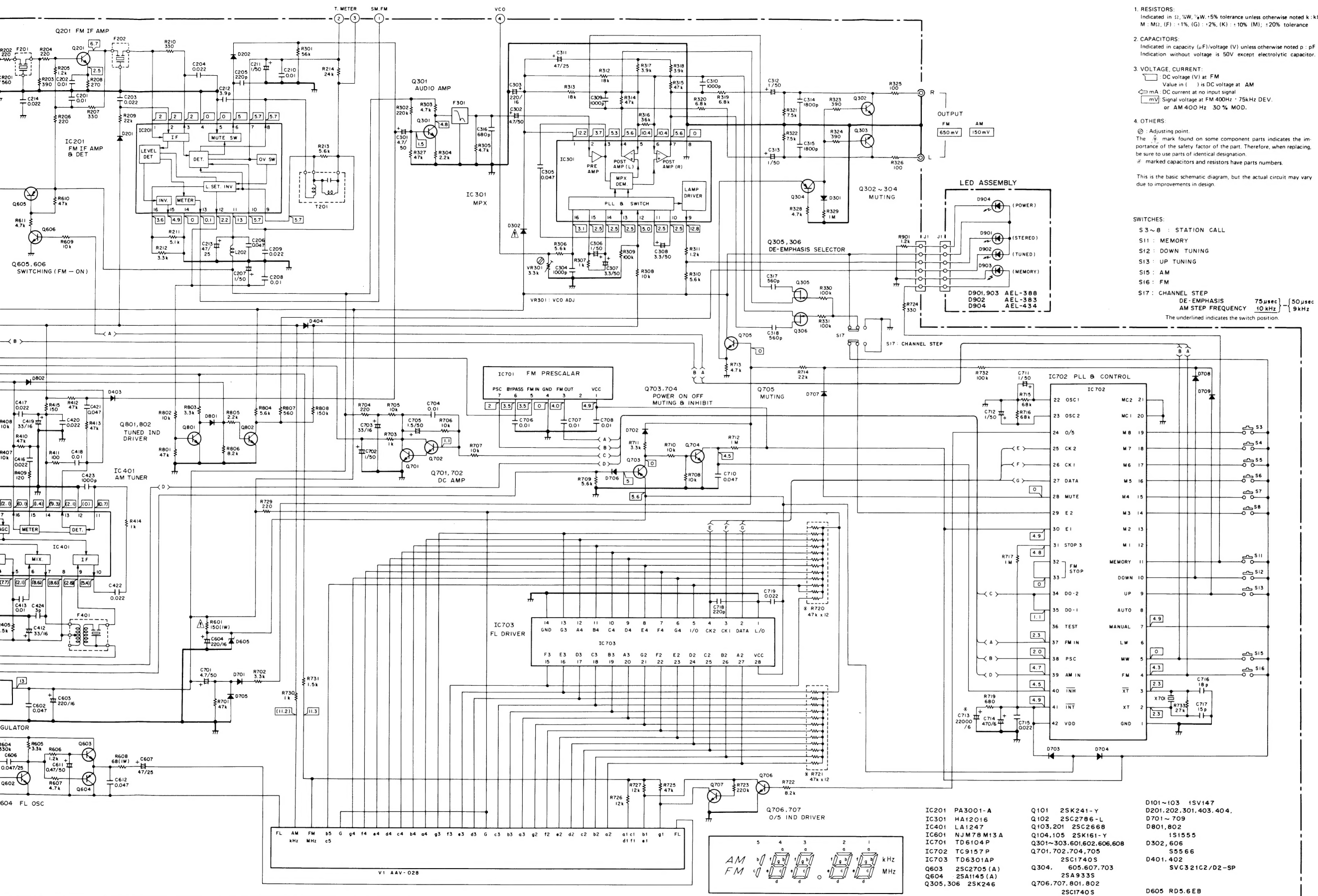
OTHERS

Mark	Symbol & Description	Part No.
	Terminal (ANTENNA)	AKA-018
	Terminal (OUTPUT)	AKB-093
	Terminal (DC INPUT)	AKN-203
★ V1	Flourescent display tube	AAV-028
★ X701	Crystal resonator Screw (3 x 6)	ASS-025 PBZ30P060FMC

LED Assembly

Mark	Symbol & Description	Part No.
★	D901, D903 LED (RED)	AEL-388
★	D902 LED (GREEN)	AEL-383
★	D904 LED (RED)	AEL-434





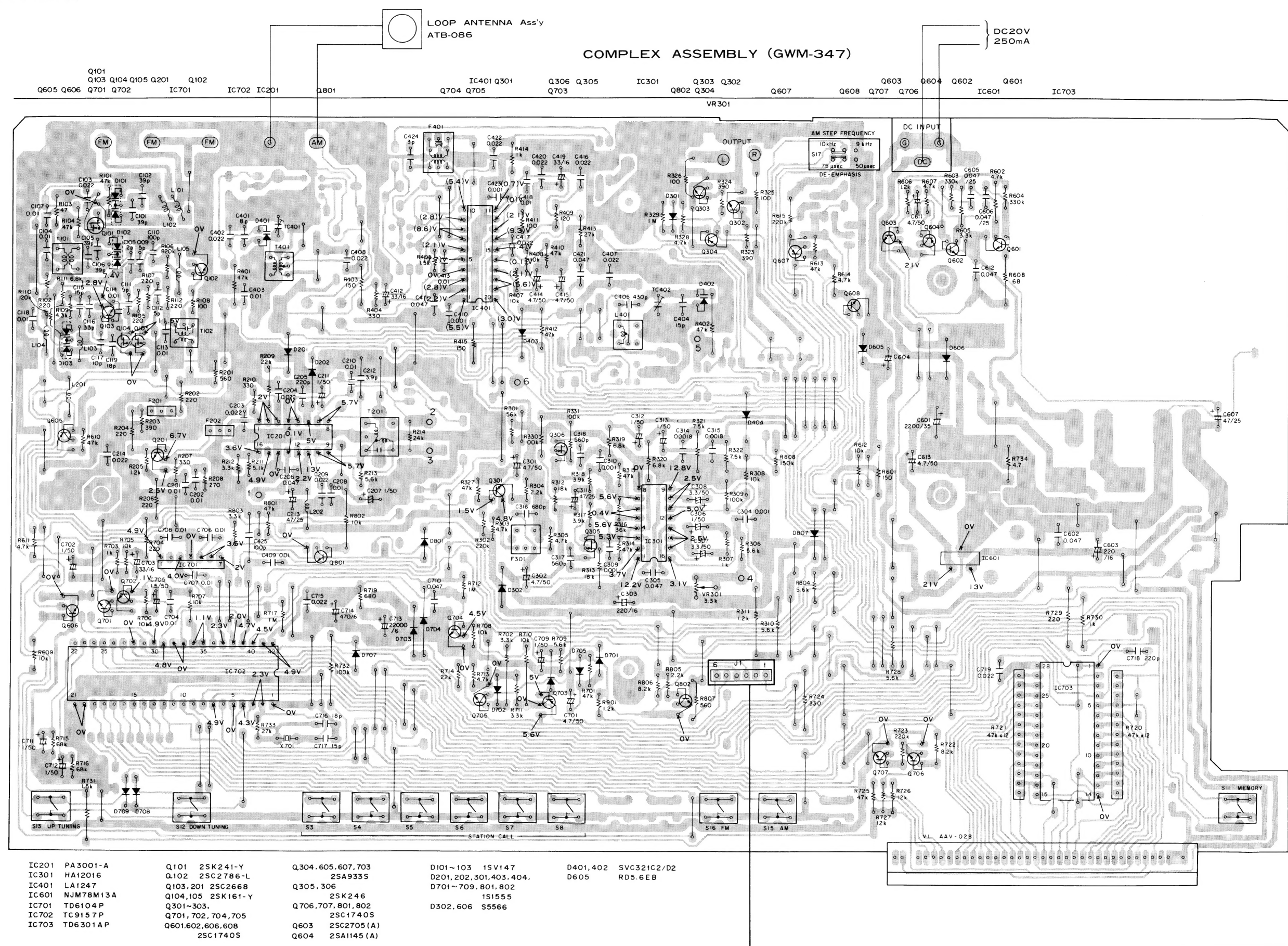
P.C. BOARDS CONNECTION DIAGRAM

A

B

C

D



4. FOR THE ZS TYPE

ELECTRICAL PARTS LIST

NOTES:

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560Ω 56 × 10¹ 561 RD½PS 561 J


47kΩ 47 × 10³ 473 RD½PS 473 J

0.5Ω 0R5 RN2H 0R5 K

1Ω 010 RS1P 010 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ 562 × 10¹ 5621 RN½SR 5621 F

- The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★ GENERALLY MOVES FASTER THAN ★


This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.


Miscellaneous Parts

Mark	Symbol & Description	Part No.
	Complex assembly	GWM-365

Complex Assembly (GWM-365)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC201	PA3001-A (HA11225)
★★	IC301	HA12016
★★	IC401	LA1247
 ★★	IC601	NJM78M13A
★★	IC701	TD6104P
★★	IC702	TC9157P
★★	IC703	TD6301AP
★★	Q101	2SK241-Y
★★	Q102	2SC2786-L
★★	Q103, Q201	2SC2668
★★	Q104, Q105	2SK161-Y
★★	Q301 — Q303, Q601, Q602, Q606, Q608	2SC1740S (2SC2458)
★★	Q701, Q702, Q704 — Q707, Q801, Q802	(2SC2603) (JC501)
★★	Q304, Q605, Q607, Q703	2SA933S (2SA1048) (2SA1115) (JA101)
★★	Q603	2SC2705(A)
★★	Q604	2SA1145(A)

Mark	Symbol & Description	Part No.
★	D101 — D103	1SV147
★	D201, D202, D301, D403, D404, D701 — D709, D801, D802	1S1555 (US1035)
 ★	D302, D606	S5566
★	D401, D402	SUC321C2/D2-SP (SVC321C2/D2)
★	D605	RD5.6EB (HZ5.6EB)

TRANSFORMERS, COILS AND FILTERS

Mark	Symbol & Description	Part No.
	T101 FM RF transformer	ATC-194
	T102 FM IF transformer	ATE-063
	T201 FM DET transformer	ATE-052
	T401 AM ANT transformer	ATB-099
	L101 FM ANT coil	ATC-192
	L102 FM ANT coil	ATC-193
	L103 FM OSC coil	ATC-215
	L104, L105, L201, L202 RF choke coil	ATH-049
	L401 AM OSC coil	ATB-100
	F201 FM ceramic filter	ATF-119
	F202 FM ceramic filter	ATF-107
	F301 Beat eliminate filter	ATF-146
	F401 AM ceramic filter	ATF-133

SWITCHES

Mark	Symbol & Description	Part No.
	S3 — S8, S11 — S13, S15, S16 Tact switch	ASG-711 (ASG-703)

CAPACITORS

Mark	Symbol & Description	Part No.
	TC401, TC402 Ceramic trimmer	ACM-015
	C601 Electronic (2200/35)	ACH-367
	C713 Electronic (22000/6)	ACH-243
	C401	CCDCH 080D 50
	C117	CCDCH 080D 50
	C115, C404, C717	CCDCH 150J 50
	C716	CCDCH 180J 50
	C116	CCDCH 330J 50
	C101, C102, C105, C106	CCDRH 390J 50
	C108	CCDSL 020C 50
	C424	CCDSL 030C 50
	C109, C111, C112	CCDSL 050C 50
	C110	CCDSL 101J 50
	C205, C718	CCDSL 221J 50
	C119	CCDTH 120J 50
	C212	CCPCH 3R9K 50
	C425	CCPSL 101J 50
	C611	CEA R47M 50L
	C207, C211, C306, C312, C313, C702, C709, C711, C712	CEA 010M 50L
	C705	CEA 1R5M 50L
	C303, C603, C604	CEA 221M 16L
	C307, C308	CEA 3R3M 50L
	C412, C419, C703	CEA 330M 16L
	C301, C302, C414, C415, C613,	CEA 4R7M 50L
	C701	
	C213, C311, C607	CEA 470M 25L
	C714	CEA 471M 6L
	C309, C310, C410, C423	CKDYB 102K 50
	C314, C315	CKDYB 182K 50
	C316	CKDYB 681K 50
	C104, C107, C113, C114, C118, C201, C202, C208, C210, C403, C409, C413, C418, C704, C706 – C708	CKDYF 103Z 50
	C103, C203, C204, C209, C214, C402, C407, C408, C416, C417, C420, C422, C715, C719	CKDYF 223Z 50
	C206, C305, C411, C602, C612, C710	CKDYF 473Z 50
	C605, C606	CKDYX 473M 25
	C421	CQMA 473J 50
	C304	CQSA 102J 50
	C405	CQSA 431J 50

RESISTORS

NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
★	VR301 Semi-fixed	VRTB6VS332
	R720, R721 Resistor array	ACN-142
⚠	R601	RS1LMF 151J
	R608	RS1LMF 680J
	R734	RD1/4PMFL 4R7J
	R308, R310, R311, R402, R415, R602, R605, R702, R710, R724, R728 – R732, R802, R807	RD1/4PM □□□J
	Other resistors	RD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal (ANTENNA)	AKA-018
	Terminal (OUTPUT)	AKB-093
	Terminal (DC INPUT)	AKN-203
★	V1 Fluorescent display tube	AAV-028
★	X701 Crystal resonator	ASS-025
	Screw (3 x 6)	PBZ30P060FMC

LED Assembly
SEMICONDUCTORS

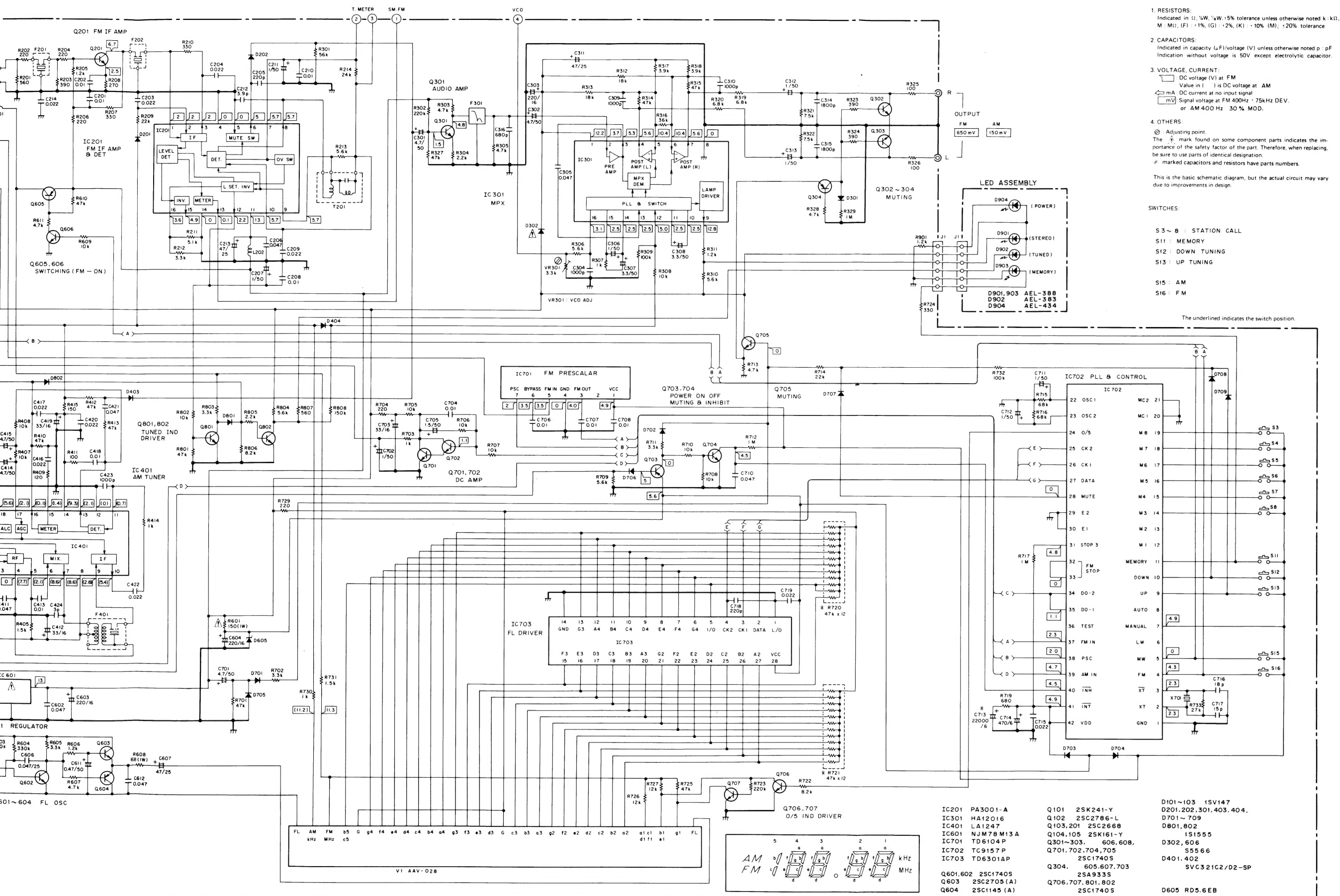
Mark	Symbol & Description	Part No.
★	D901, D903 LED (RED)	AEL-388
★	D902 LED (GREEN)	AEL-383
★	D904 LED (RED)	AEL-434

5 4 3 2 1

AM *b* *f* *a* *f* *a* kHz

FM *c* *g* *c* *g* *c* MHz

d *d* *d* *d* *d*



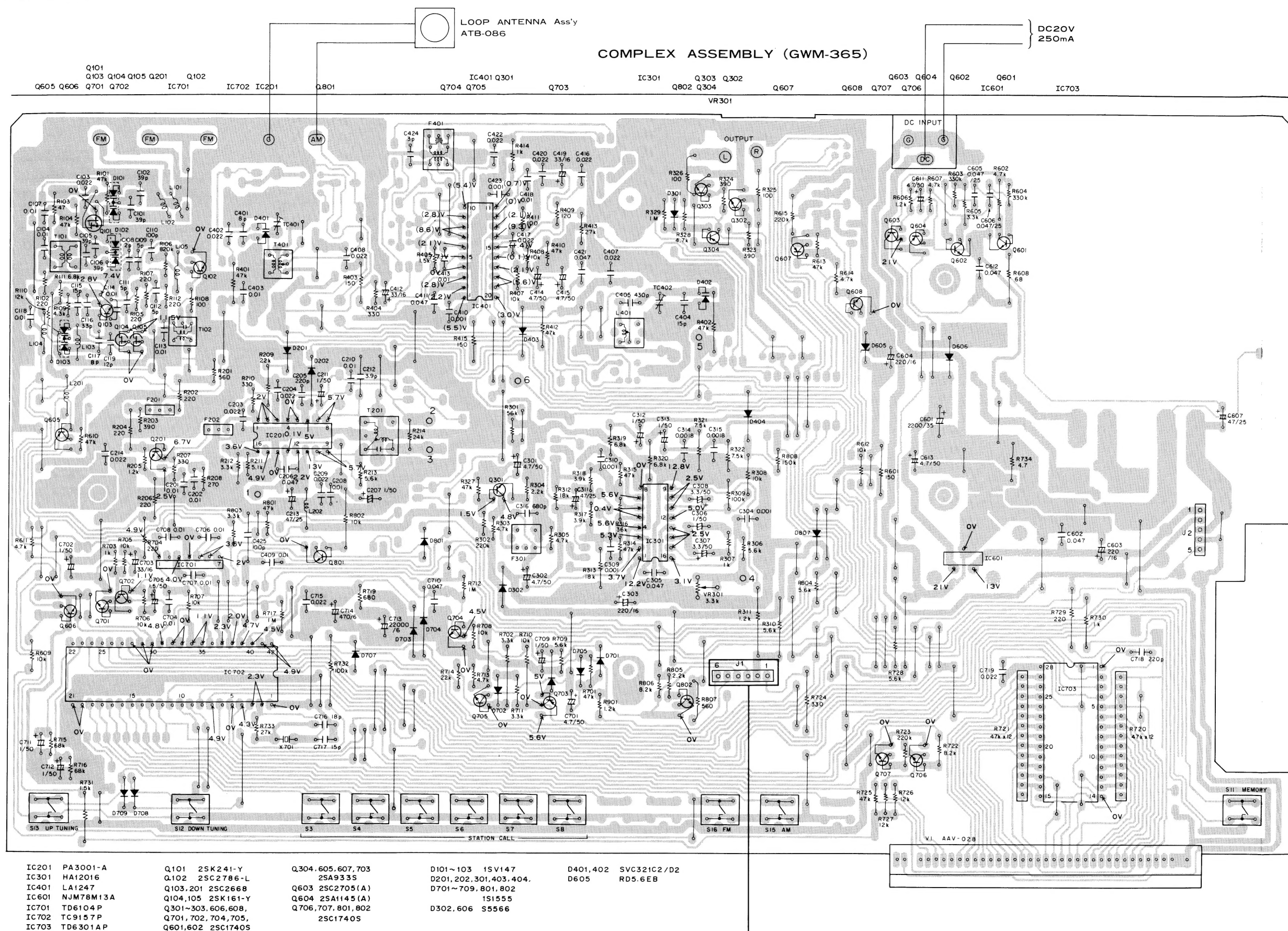
A

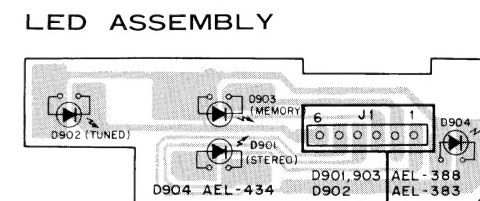
B

C

D

P.C. BOARDS CONNECTION DIAGRAM





D101~103 1SV147 D401,402 SVC321C2/D2
D201,202,301,403,404, D605 RD5.6EB
D701~709,801,802
1S1555
D302,606 S5566